

We claim:

- 1 1. A processor comprising:
  - 2 a plurality of functional units including a first functional unit and a second
  - 3 functional unit, the first functional unit to receive instructions, to
  - 4 determine whether ones of the instructions are associated with a
  - 5 virus, and to transmit the ones of the instructions not associated with
  - 6 the virus to the second functional unit.
- 1 2. The processor of claim 1, wherein the first functional unit is a virus detection
- 2 unit, and wherein the second functional unit is a fetch and decode unit.
- 1 3. The processor of claim 1, wherein the first functional unit includes,
  - 2 a virus information unit to store virus information; and
  - 3 a virus detection engine to compare each of the instructions to the virus information.
- 1 4. The processor of claim 3, wherein the virus detection unit includes an
- 2 authentication unit to authenticate a source of the virus information.
- 1 5. The processor of claim 1, wherein the first functional unit includes a virus
- 2 information unit, the virus information unit to store a state machine that is to
- 3 determine whether ones of the instructions are associated with a virus.
- 1 6. The processor of claim 1, wherein the first functional unit is a virus detection
- 2 unit and wherein the second functional unit is a dispatch and execution unit.
- 1 7. A apparatus comprising:
  - 2 an instruction cache to store instructions;

3           a virus detection unit to receive the instructions from the instruction cache,  
4           the virus detection unit to determine whether ones of the instructions  
5           are associated with a virus; and  
6           a dispatch and execution unit to receive from the virus detection unit the ones of the  
7           instructions that are not associated with the virus.

1   8.       The apparatus of claim 7, wherein the virus detection unit includes a virus  
2       information unit to store virus signatures, the virus detection unit to compare each of  
3       the instructions to the virus signatures.

1   9.       The apparatus of claim 8, wherein the virus detection unit includes an  
2       authentication unit to authenticate a source of the virus signatures.

1   10.      The apparatus of claim 7, wherein the virus detection unit includes a virus  
2       information unit to store state information, the virus detection unit to input each of  
3       the instructions into a state machine.

1   11.      A method comprising:  
2           receiving an instruction in a first functional unit of a processor pipeline;  
3           determining whether the instruction is associated with a virus; and  
4           after determining the instruction is not associated with a virus, transmitting the  
5       instruction to a second functional unit of the processor pipeline for further  
6       processing.

1   12.      The method of claim 11, wherein the determining whether the instruction is  
2       associated with a virus includes, comparing the instruction to virus signatures stored  
3       in the first functional unit.

1       13.     The method of claim 11, wherein the determining whether the instruction is  
2     associated with a virus includes inputting the instruction into a state machine stored  
3     in the first functional unit.

1       14.     The method of claim 11 wherein the virus is a polymorphic virus.

1       15.     The method 11, wherein the first functional unit is a virus detection unit, and  
2     wherein the second functional unit is a fetch and decode unit.

1       16.     The method of claim 11, further comprising:  
2     after determining the instruction is associated with a virus, removing the instruction  
3     from the processor pipeline.

1       17. The method of claim 11, wherein the instruction has been partially processed by  
2     a set of one or more functional units of the processor pipeline.

1       18.    A processor comprising:  
2            an instruction cache to store instructions;  
3            a virus detection unit to receive the instructions from the instruction cache,  
4            the virus detection unit to transmit ones of the instructions that are  
5            not associated with a virus, the virus detection unit including,  
6            a virus information unit to store virus signatures and state machine  
7            information;  
8            an authentication unit to authenticate the source of the virus  
9            signatures and the state machine information; and  
10           a virus detection engine to compare certain of the instructions to the  
11           virus signatures, and to input certain of the instructions into a  
12           state machine configured according to the state machine  
13           information;

14           a fetch and decode unit to receive ones of the instructions from the virus  
15           detection unit; and

16           a set of one or more execution units to receive ones of the instructions from the  
17           fetch and decode unit and to execute the ones of the instructions.

1       19.    The processor of claim 18, wherein the virus detection engine determines  
2       whether ones of the instructions are associated with the virus.

1       20.    The processor of claim 18, wherein the virus is a polymorphic virus.

1       21.    A system comprising:  
2           a synchronous dynamic random access memory (SDRAM) unit;  
3           a processor coupled to the SDRAM unit, the processor including,  
4           a plurality of functional units including a first functional unit and a second  
5           functional unit, the first functional unit to receive instructions, to determine whether  
6           ones of the instructions are associated with a virus, and to transmit the ones of the  
7           instructions not associated with the virus to the second functional unit.

1       22.    The system of claim 21, wherein the first functional unit is a virus detection  
2       unit, and wherein the second functional unit is a fetch and decode unit.

1       23.    The system of claim 21, wherein the first functional unit is a virus detection  
2       unit and wherein the second functional unit is a dispatch and execution unit.

1       24.    The system of claim 21, wherein the first functional unit includes,  
2           a virus information unit to store virus information; and  
3           a virus detection engine to compare each of the instructions to the virus information  
4           stored in the processor.

1    25.    The system of claim 21, wherein the virus detection unit includes an  
2    authentication unit to authenticate a source of the virus information.

1    26.    The system of claim 21, wherein the first functional unit includes a virus  
2    information unit, the virus information unit to store a state machine for determining  
3    whether ones of the instructions are associated with a virus.